Dear Sprague Employe,

For Sprague Electric, 1969 was a year of progress marked by record sales volume and a return to profitable operations.

The favorable gain in our sales in 1969 resulted from a generally strong demand for components of all types during the first ten months of the year. The electronic components industry as a whole recorded a larger gain in volume of shipments than did the electronic and equipment industry in total, reflecting the return to a more normal rate of component purchasing following two years of inventory reduction, as well as continued dynamic growth in the use of both monolithic and hybrid integrated circuits. For Sprague, demand for capacitors was the best in several years. Our shipments increased through the early Fall, and then levelled off during the fourth quarter in line with a noticeable softening in market demand for both consumer and Government electronics which served to offset further gains in shipments to the industrial market.

The improved earnings for the year resulted from a combination of higher sales volume and continued close attention to costs and expenses in all Company operations. The year’s results were also aided by good gains in both the sales and earnings of our international operations. Our integrated circuit operating results showed marked improvement in the fourth quarter, but the Semiconductor Division operated at a loss for the year.

Several corporate developments of future significance took place in 1969. In March, Sprague entered into an agreement under which the Company acquired a substantial minority interest in Pirgo Electronics, Inc. Pirgo was formed by a group of well known semiconductor specialists, and presently manufactures power semiconductor devices for commercial and industrial applications.

In June, we entered into an agreement with Mostek Corporation of Dallas, Texas, under which Mostek is manufacturing MOS devices in our Worcester facility. Mostek was organized early in 1969 to specialize in the design and manufacture of MOS (metal-oxide semiconductor) integrated circuits and large-scale integrated arrays.

Late in the year, we set up two new corporations in Mexico for the purpose of conducting manufacturing operations in the Mexican Free Zone. As of December 31, 1969, we concluded the sale of the assets and business of our Rockville, Maryland operations to Vectrol Inc., a new company organized by the management and engineering personnel of the plant.

At the Annual Meeting of Stockholders held on March 28, 1969, a new director, Robert E. Armitage, Senior Financial Officer and Treasurer, was added to the Board of Directors. At a meeting of the Board held on February 2, 1970, Neal W. Welch, Chairman of the Executive Committee, was also elected a Vice Chairman of the Board.

At this time, the outlook for 1970 is clouded by the uncertain general economic climate. Certain industries which are important users of electronic components have recently curtailed operations in the face of reduced demand. This is particularly true in the case of consumer durable goods. The cutbacks have resulted in lower shipments for Sprague in these markets over the past several months, but they were largely offset by continuing gains in shipments of components to the industrial market.

In 1970, we continue to look for further growth in sales, and our earnings should improve as a result of our continuing cost reduction programs, substantially increased sales of integrated circuits, and the benefits of opening several low-cost manufacturing operations outside the United States.

To our more than 12,000 employes throughout the world, we wish to express our sincere appreciation for your loyal support.

Robert C. Sprague
Chairman of the Board

Bruce Carlson
President
OUR TOTAL INCOME FOR 1969 WAS $148,970,744.

Let's take a few minutes to study these figures and see exactly how this money was spent...

88.83% of every dollar of income is spent for two major items -

- 44.49% or $66,277,790
  Paid for production materials, services and supplies necessary to manufacture our products.

- 44.34% or $66,057,119
  Paid to employes – Better than 44 cents of every dollar we receive is paid to our employes in wages and benefits.

After these two major expenditures we have exactly 11.17% of our sales dollar left for all other expenses of running Sprague Electric Company.
Three items combine for a total of 10.19%. They are: Taxes, Depreciation and Amortization, and Interest on Borrowed Money.

- Federal and State Taxes: 4.41% ($6,572,936)
- Depreciation and amortization of equipment: 3.91% ($5,822,014)
- Interest on Borrowed Money: 1.87% ($2,780,613)

**PROFIT** - On our business in 1969 amounted to less than one cent on every dollar of sales. (0.98%)

**DIVIDENDS TO STOCKHOLDERS** - amounted to $1,362,867 or 0.91% of each dollar (less than one cent)

**MONEY REINVESTED IN THE BUSINESS** - was $97,405 or 0.07% (less than 1/10 of a cent)

*Net sales plus other income of $1,914,332*
For 36 years, from the founding of the Company in 1926 until 1962, the Sprague "logo" or masthead was the familiar flash shown above on the left. It was the trademark used on letterheads and in advertisements as a readily recognizable symbol of the Sprague Specialties Company as we were known until 1944 and Sprague Electric Company after that time.

The new Mark of Reliability was adopted in 1962, not on a whim to merely change the masthead, but because it more properly identified the Company and its products. People unfamiliar with the electronics industry were inclined to think of Sprague Electric as a utility company and not a manufacturer of electronic components.

When the Company was founded in 1926, the age of electronics was in its infancy. Television sets, computers, radar, missiles and the host of other products made possible by the development of electronic components were unknown to the average person. They were considered in the realm of science fiction – something that might happen sometime in the far distant future.

The growth and development of Sprague Electric has coincided with the growth of the electronics industry. A strong research and development group, established shortly after the Company was created, has been responsible for new and improved products which have been in demand as electronic gear became more and more sophisticated.

Long before the Mark of Reliability was incorporated in our masthead, the Company had become well known in the trade for the exceptional quality of its products. It is a reputation we have worked hard to establish and maintain since the Company was founded.

REGISTERED TRADEMARKS

In addition to the Sprague logo, the Company has over 100 registered trademarks for specific products. They range from Acrasil®, a resistor, to Yellow Jacket®, a mylar film paper capacitor, and cover the entire product line.

In 1926, when the decision was made to discontinue manufacturing the Tone Control, our original product, and concentrate instead on the sale of the small fixed paper condenser which was the heart of the Tone Control, we registered the trademark, Midget, for the new unit. It was less than one half the size and only one eighth the weight of the standard mica condenser then in use. The success of the Midget® firmly established the Company in the electronic components field. Other early trademarks included Koolohm, Vitamin Q, Ceron, Ceroc and Atom – all of which were types of units with the exception of Vitamin Q which is an impregnant for paper capacitors.

The electronics industry has always been highly competitive. Success is achieved by developing wholly new products or making outstanding improvements in existing products or their method of manufacture. Sprague Electric has been successful for 44 years and will continue to be if each and every employe is conscious of the Mark of Reliability.
OUR SENIOR MANAGEMENT TEAM
DIRECTS THE ACTIVITIES OF
SPRAGUE ELECTRIC COMPANY

(Left to right) Ernest L. Ward, Vice Chairman of the Board; Bruce R. Carlson, President; Neal W. Welch, Vice Chairman of the Board and Chairman of the Executive Committee; and Robert C. Sprague, Chairman of the Board and Chief Executive Officer.

(Left to right) John H. Winant, Vice President, Facilities and Industrial Relations; Robert C. Sprague, Jr., Senior Vice President, Corporate Services; Carroll G. Killen, Vice President, Sales and Corporate Marketing; (standing) Francis G. Jenkins, Vice President, Materials; and Neal W. Welch.

(Left to right) John L. Sprague, Senior Vice President, Semiconductor Operations; William E. McLean, Vice President, Operations; Bruce R. Carlson; and William S. Templeton, Vice President, Operations.

(Left to right) Robert E. Kelley, Senior Vice President, Legal; Robert E. Armitage, Senior Financial Officer and Treasurer; and David B. Peck, Vice President, Development and Planning.
THE MARKETS FOR OUR PRODUCTS

The electronics industry supplies components to three broad areas – industrial, government (or military) and consumer. The great majority of electronic manufacturers concentrate on one particular aspect of the market or one family of components.

Sprague Electric, on the other hand, is a broadly based company, supplying all markets with an extremely wide range of components from capacitors to the most sophisticated semiconductors, integrated circuits and functional electronic circuits. This broad competence has many advantages to the manufacturer purchasing our products since we not only sell an extremely wide range of units, but also have the technical know-how to assist our customers in selecting the best type of unit for their particular need.
Historically, new families of products have been developed for the military which require extremely high reliability and have severe size restrictions. Development is an expensive process and is reflected in the relatively high price of the units. As manufacturing techniques are refined and production methods improved, many products are reduced in price and become competitive for the industrial and consumer markets. This trend is presently most prevalent in the semiconductor and integrated circuit product area. Because of current price reductions these units are now being considered for many industrial and consumer applications.
The electronics industry is fighting a desperate battle. It is in danger of being engulfed by foreign imports from low wage Asian countries. How did this occur so suddenly, with no one being aware of the problem?

The truth is that it didn't happen suddenly and many people have been extremely aware of the problem. Better than 10 years ago, it became apparent to U.S. electronics manufacturers that the Japanese were probing our stateside markets with the express purpose of taking over in certain product lines. They had the technical capability and the most modern equipment, a great deal of which was supplied by the U.S. government following World War II. They also had a wage scale only 1/5 that of our U.S. companies. With wages accounting for about 45% of the cost of producing electronic components, the advantage of a low wage scale is abundantly clear. This market takeover was not a new approach for the Japanese. They had used exactly the same tactics in the watch, textile, sporting goods and sewing machine industries with disastrous effects on the United States companies. Our government has not seen fit to provide tariff protection to its industries – in fact, we are the only industrial country in the world which does not provide reasonable protection to its own domestic industries.

Back in 1955, Japanese electronic component shipments to the U.S. were about $250,000. By 1960, they had soared to $94,013,000 and rose another 8.9 per cent in the first half of 1961. In 1962, Robert C. Sprague was the chief spokesman in Washington for tariff protection for the electronics industry. His appeal, and those of other manufacturers, fell on deaf ears. During this same period a series of three pamphlets were mailed to all Sprague Electric employees asking their assistance in fighting the import threat by writing to their congressman and senators. It is highly probable that not even our own employees were deeply disturbed by this
threat to their job security.

It is also interesting to note that in 1962 the national labor unions were all strongly opposed to any tariff protection and their lobbyists were effective in their presentations – since their views prevailed. The reasoning behind the union's actions at that time may be difficult to understand, but at this point in time, the situation has changed completely. The unions are now strong advocates of tariff protection and are deeply concerned about the number of jobs which have been lost to foreign competition during the last few years alone.

Future plans call for cooperation between the unions and industry representatives. Mr. Sprague and James D. Compton, Executive Assistant to Paul J. Jennings, President of IUE, recently agreed to cooperate in trying to solve the increasingly serious electronics import problem.

In a recent speech, Mr. Sprague stated his position regarding imports very clearly. He said, “I believe in trade between nations, but I don't believe that any nation should be permitted, due to exceedingly low wages, to take over one of our basic industries, such as the consumer electronic and components industry.” Continuing, he cited some statistics to substantiate his point. “At the present time, eliminating automobile radios, 92% of the radios sold in this country are manufactured in low wage foreign countries. So are 50% of black and white TV sets, and last year 27% of color TV sets; and the percentage is rapidly increasing. Trade policies in this country which permit this seem to me to be ridiculous. Between 1966 and 1968 there was an absolute loss in U.S. employment in the radio, TV, electronic component and accessory industries of 60,000 persons.”

Mr. Sprague also pointed out that “during the four year period 1964 through 1968, imports of electrolytic capacitors increased 101% and fixed capacitors (ceramics, small paper and film dielectrics) increased 176%. In 1968, electrolytic capacitors imported into this country, either as individual components, or included in foreign made consumer electronic equipment exceeded the total U.S. production of such components by 36%, and in the case of fixed capacitors, exceeded the total U.S. production by 81%.”

Most people do not realize that European nations have systematically imposed quotas on imports from Japan to safeguard their own industries and prevent the flood of Japanese goods into European markets which has become commonplace in the United States. The Japanese themselves keep very close control over imports from other countries which might damage their own industries.

In this connection, the early Sprague Electric operations which were established overseas were primarily for the purpose of supplying markets which would not otherwise have been open to us. For example, our plants in Belgium and Italy supply the European Common Market. Mexico supplies Latin American Countries and Hong Kong, the Far Eastern market. Recently we have been forced to establish other non-US plants to remain competitive in the US market with some of our products. However, we still favor reasonable quota legislation to curtail imports.

**CONCLUSIONS**

As employees in the electronics industry, we must have more than a casual concern for the problems facing our company. We cannot just sit back and assume that the situation will take care of itself.

The only fact that will make an impression on our senators and representatives in Washington is a sincere outpouring of opinion from people directly affected by this unjust policy. Our future is at stake and we cannot leave the outcome to chance.
As employes of Sprague Electric we take things like vacations, holidays, rest periods and our various insurance programs pretty much for granted. All of these, and many more, are part of “our second pay check.” They are benefits provided by the Company for its employes, and their total cost runs to many thousands of dollars each year.

Three of the extra benefits are required by law. All the rest are provided voluntarily by Sprague Electric. The law requires that the Company match each employe’s contribution to FICA (Social Security) dollar for dollar. For example, if you have $4.50 withheld from your pay check each week, then Sprague Electric must deposit a like amount to your account. Unemployment compensation and workmen’s compensation are paid entirely by the Company.

Many employes confuse Social Security and Unemployment Compensation and Workmen’s Compensation. The basic idea of Social Security is a simple one: during working years employes and their employers pay social security contributions which go into special funds. When an employe’s earnings stop or are reduced due to retirement or disability, monthly cash benefits are paid from the funds to replace part of the earnings of the employe.

Unemployment Compensation is paid entirely by the employer. The funds are used to provide payments to employes temporarily out of work because of lay off or
reduction in the work force. Workmen’s Compensation is also paid entirely by the employer. These funds provide payments for employes who may be injured on the job. The actual provisions vary from state to state but the basic provision is to help compensate for loss of income while recovering from an industrial injury.

The various insurance programs, including life insurance, hospitalization and the pension plan are all heavily financed by the Company. The premiums which we pay, as employes, for our hospital insurance are only about 30% of the cost. The balance, or 70%, is paid by Sprague Electric and is a large item in our “second pay check.” Each time an increase in benefits is provided there is an increase in the cost of the program and the entire cost of all increases granted has been absorbed by the Company. There has been no increase in the premium paid by employe.

Vacation and holiday pay are two large items which the Company provides for all employes. The length of the vacation depends on the years of service, with a maximum of four weeks. Holidays observed vary for different locations depending on special holidays traditionally observed in various states.

Other items which we are apt to overlook include our sports programs, scholarships, service awards, suggestion awards and educational sponsorship for job related studies. It all adds up to a pretty impressive package – and one that shouldn’t be overlooked.
Ho-Hum, they're talking safety again – may be the reaction of some readers, but safety statistics are important because they tell a good deal about the working climate of a company. If you have the misfortune to be one of the numbers included in the yearly total, then the statistics are extremely meaningful to you. In this connection, it would be most helpful if we could record each near accident, because these figures would point out possible safety hazards.

Let's take a few minutes to review our safety figures for the latest reporting period (July 1, 1968 to June 30, 1969). These figures reveal a great deal about the general working climate and the stress placed on the promotion of safety. During the past yearly period we had 3.64 accidents for every million manhours worked. This is a very good record, but not good enough. Our goal is the elimination of all lost time accidents and this can only be accomplished with the cooperation of every employe. No one wants to have an accident, but we all are inclined to be careless on occasion – and this is when an accident may occur.

**SIX PLANTS REPORT NO ACCIDENTS**

The breakdown of safety statistics by plants provides some interesting facts. Six small locations throughout the country reported no lost time accidents for the year. They were: Annapolis Junction, Maryland; Los Angeles and Visalia, California; Plymouth, New Hampshire; Vandalia, Ohio and Micro Tech, Inc. in Worcester, Massachusetts. They worked a total of 1,520,385 hours.

Of those plants reporting lost time accidents during the year, Dearborn Electronics, Inc., Orlando, Florida; Hillsville, Virginia and Wichita Falls, Texas listed only one accident each. The Wichita Falls accident resulted in only one day lost from work; Hillsville recorded two days lost from their accident; and Dearborn lost 19 days. Locations reporting two lost time accidents for the year included Barre, Vermont and Sprague of Wisconsin in Grafton, Wisconsin. Barre lost a total of 67 days from the two, while Sprague of Wisconsin recorded 24 days. Barre's severity rate was a relatively high 9.1 while Sprague of Wisconsin was at the companywide average of 3.6.

Ashe County, North Carolina recorded three lost time accidents but kept a low frequency rate of 1.9 with their total of 1,572,451 manhours worked. Concord and Nashua, New Hampshire each had four lost time accidents during the year. For Concord the frequency rate, figured according to the one million manhour formula, was 3.0. Nashua, with a higher manhour total, had a 2.3 frequency.

The Sanford, Maine plant recorded a relatively high, eight lost time accidents during the year for an 8.6 frequency rate. Their employes worked a total of 921,125 manhours. North Adams employes had a total of 16 lost time accidents, but the 6,292,839 manhours worked gave them a frequency rate of 2.5 – which is below the companywide average of 3.64.

Worcester employes were literally plagued with lost time accidents for a total of 24 and a severity rate of 12.0. A total of 2,001,357 manhours were accumulated at the semiconductor plant. During the current year, a concentrated safety program has reduced considerably the high frequency rate. We anticipate a much improved record for 1970.

**SAFETY ATTITUDE**

The individual "safety attitude" of each employe can be our most important element in a good record. Accidents don't always happen to the other fellow – and they are most likely to occur when our thoughts are distracted momentarily for one reason or another.

Sprague Electric provides the ingredients of a safe job. We, as employes, provide the human element which is the crucial ingredient in any safety program.
Sprague Electric's Contributions to the Apollo Moon Landing

The most unique contribution to the Apollo 11 flight in July 1969 was the Message Capsule prepared by Sprague Electric employes at the North Adams and Worcester plants. Microscopic messages from 74 heads of state, as well as other material, were engraved on a disc of pure silicon which was then placed in an 11-sided silver anodized aluminum capsule resembling a ladies compact.

The messages, reduced to 1/200 their original size, were the equivalent of about 660 pages of printed and typed material. Basic steps in the process started with the making of a full size photographic film positive of the original document which was then reduced in two steps to the final size.

The resulting master negative was printed with ultraviolet light on a photosensitive emulsion which had been coated on a 99.9999 per cent pure disc of silicon, on which had been grown a quartz (silicon dioxide) layer 4/1,000,000 of an inch thick. Where the light impinged on the emulsion, it hardened. The non-hardened emulsion was then washed away, leaving the message as a window in the photoresist material. The wafer was then placed in a buffered solution of hydrofluoric acid and the quartz etched away to expose the shiny grayish mirror-like surface of the silicon. The discs were then washed and the masking resist stripped off.

Over 50,000 Components Produced

The Message Capsule was an exciting contribution to the Apollo 11 flight, but even more important to the success of the mission were the better than 50,000 components produced at various Sprague plants across the country. As the number one supplier of electronic components, Sprague Electric played a significant role in the success of the Apollo 11 flight. "The Mark of Reliability" is more than just a trademark to our employes.

NASA Plaque - Dr. James C. Elms, (right) Director of the NASA Electronics Research Center, Cambridge, Massachusetts presented a plaque to the Sprague Electric Company for its preparation of the Message Capsule which the Apollo 11 astronauts left on the moon. Robert C. Sprague, (left) Chairman of the Board and Chief Executive Officer, received the award on behalf of the Company. With him was Bruce R. Carlson, President, who held a 20X enlargement of the micro-messages.